

Northern States Power Company d/b/a Xcel Energy

04-84-TR-XCEL

**IN THE MATTER OF XCEL ENERGY'S APPLICATION TO THE
MINNESOTA ENVIRONMENTAL QUALITY BOARD FOR A ROUTE
PERMIT FOR A BUFFALO RIDGE-WHITE 115 KV TRANSMISSION LINE**

Direct Testimony

Of

Pamela J. Rasmussen

Team Lead, Siting and Permitting
(Xcel Energy Services Inc.)

February 3, 2005

EXHIBIT 18
MEQB Docket
04-84-TR-Xcel

**BEFORE THE ENVIRONMENTAL QUALITY BOARD
OF THE STATE OF MINNESOTA
DIRECT TESTIMONY OF PAMELA J. RASMUSSEN**

Q. Please state your name and business address.

A. My name is Pamela J. Rasmussen. My business address is 1414 West Hamilton Avenue, Post Office Box 8, Eau Claire, Wisconsin 54702-0008.

Q. By whom are you employed and in what capacity?

A. I am employed as a Team Lead, Siting and Permitting, with Xcel Energy Services Inc., the service company subsidiary of Xcel Energy, Inc. Xcel Energy, Inc. is the registered public utility holding company parent of Northern States Power Company d/b/a Xcel Energy (Xcel Energy or Company).

Q. Describe your educational background and current job responsibilities.

A. I received a Bachelor's degree from the University of Wisconsin – Eau Claire in 1987 with majors in Business Administration and Biology. Since 1989, I have worked for Xcel Energy in the land rights, regulatory and environmental areas of the Company. My primary job responsibility is to coordinate filings with the Minnesota Environmental Quality Board (MEQB) and the Public Service Commission of Wisconsin (PSCW) for construction and route permits for transmission lines and substations. In addition, I conduct the environmental analyses for Xcel Energy construction projects and statewide transmission plans. I act as Company liaison to the public during the permitting process. I am responsible for coordination of the Company's environmental issues regarding terrestrial impacts of its transmission and substation facilities.

Q. On whose behalf are you submitting this testimony?

A. On behalf of the applicant, Xcel Energy.

Q. What is the purpose of your testimony?

A. My testimony is intended to support Xcel Energy's application to the MEQB for a route permit to construct a new 115 kV transmission line from the Buffalo Ridge Substation to the new Brookings County Substation in South Dakota (Application) and to build a new Yankee Substation in Drammen or Verdi township. Please note that originally our filing stated we would connect at Western Area Power Administration's White Substation. Based on additional planning studies, we are now building a new 345/115 kV Brookings County Substation next to the White Substation and tying our new substation into the White Substation with a short 345 kV transmission line. Therefore our transmission line will now be officially referred to as the Buffalo Ridge to Brookings County 115 kV transmission line.

Q. Were you involved in the preparation of the Application?

A. Yes. I was primarily responsible for preparing the Application. I am sponsoring the Application and am available to address issues and questions arising from the Application.

Q. Do you have any changes or corrections to make to the Application?

A. No.

Q. What is the purpose of the new line?

A. In March 2003, the Minnesota Public Utilities Commission (PUC) issued a Certificate of Need for four new high voltage transmission lines, including the 115 kV line for which a permit is sought in this proceeding. PUC Docket No. E-002/CN-01-195. The new transmission lines, along with other system enhancements, are designed to allow 825 MW of wind generated energy to connect to the transmission system.

Q. Please describe, generally, the route Xcel Energy has proposed.

- A. The new 115 kV transmission line will connect the existing Buffalo Ridge Substation, located south and east of Lake Benton in Lincoln County, Minnesota to a new Yankee Substation in Lincoln County, and then to another new substation (Brookings County Substation) that will tie into the existing White Substation in Brookings County, South Dakota. Xcel Energy is also requesting authorization to reroute approximately 1.9 miles of the existing Lake Yankton-Pipestone 115 kV line to make it possible to remove a 1.4 mile segment of that line from the Hole-in-the-Mountain Wildlife Management Area and the Nature Conservancy's Hole-in-the-Mountain Prairie. These improvements are collectively referred to as "the Project."

Q. Has Xcel Energy proposed a specific route for the new line?

- A. Yes. The route Xcel Energy proposes is shown on Appendix D.1 of the Environmental Assessment prepared by MEQB Staff (EA). The route is broken down into six segments. Xcel Energy seeks a route permit approving use of Segments A, B, C, D, E and F. Segment J, an alternate to Segment E, has also been proposed. Segment E begins at the corner of 120th Street and 160th Avenue, goes north along 160th Avenue and then turns west at 140th Street to 130th Avenue where it heads north to 160th Street and then west, ending at County Rd 1. Segment J also starts at 120th Street and 160th Avenue. Segment J then heads west to County Rd 1 and north to 160th Street.

Q. How do Segment E and Segment J compare?

- A. The distinguishing characteristics between the two segments relate to tree clearing and proximity to residences. Route Segment J would require more tree clearing for safe operation of the transmission line than Segment E. Segment J would also pass by more residences. There are three homes within 300 feet of Route Segment E. In contrast, there are nine residences within 300 feet of

Route Segment J. The number of homes is partially what drives the additional tree clearing since the homes have windbreaks around them.

Q. Does Xcel Energy have a preference between Segment E and Segment J?

A. Yes. Xcel Energy prefers Segment E because it affects fewer homes.

Q. The EA includes Table 1 that shows the preliminary locations of the line and underbuild considerations. Please describe any updates or comments you have on Table 1.

A. Throughout this process, Xcel Energy has been refining the route and has several modifications to make to Table 1. They are as follows:

- We would like a corridor of 300 feet for this transmission line along the roads, 150 feet on each side of the centerline of the road. Our typical ROW requirements will be 75 feet for any cross-country portion and 42.5 feet for any section along a road. There may be some circumstances where we need a slightly wider ROW along the road, so we propose to acquire up to 45 feet of ROW where the line parallels roads.
- For the last 0.5 miles of segment A, Xcel Energy has requested a wider corridor to accommodate parallel construction to the existing 34.5 kV wind feeders. At this time we believe we may be able to underbuild the feeders, but need to assess our outage requirements prior to construction. Given this consideration, we would like a wider corridor of 200 feet from the center of US 75. In this location we would acquire a ROW of up to 75 feet.
- Xcel Energy requests the authority to design the line as a double circuit 115 kV transmission line up to one mile to the east of the Yankee Substation and up to two miles to the north of the Yankee Substation.

I have included an updated Table 1 reflecting these changes as Ex. PR-1 to my testimony.

Q. Xcel Energy's Application proposes five different substation locations for the new Yankee Substation. How did Xcel Energy select these locations?

A. Xcel Energy considered a variety of criteria. The Company identified those options that were near primary roads, near transmission lines, minimized impacts to residences, avoided low areas, wetlands and wildlife areas, and were large enough (40 acres) to provide for future expansion and a buffer for nearby residences. The Company also considered input from small wind developers to provide access to the transmission system for projects from small locally owned wind generators and the potential of a voluntary sale of the land needed for the substation. All five of the proposed substation sites meet these criteria.

Q. Has Xcel Energy been able to negotiate a voluntary sale with any of the owners of the five proposed sites?

A. No. Xcel Energy right-of-way has discussed the substation locations with most of the landowners, but has not begun any negotiations.

Q. Does Xcel Energy have a strong site preference for the new Yankee Substation?

A. No. Because all locations meet the criteria I described, any of the five locations would be acceptable. However, the Company has a slight preference for sites 3, 4 and 5 located at the intersection of 160th Street and County Rd 1 because they are further away from homes and are on sites which would require minimal preparation for construction. The other two options are less desirable because they are closer to homes and would require more site preparation due to the terrain. We request the MEQB approve sites 3, 4 and 5 to allow us the ability to negotiate with the landowners for a final site.

Q. Please describe Xcel Energy's request for routing flexibility around the new Yankee Substation.

A. As noted in my modifications to Table 1, Xcel Energy would like to have flexibility to build the structures capable of double circuit 115 kV within two miles to the north and one mile east of the Yankee Substation as shown in Segments E and J. Xcel Energy is also planning to add single- or double-circuit feeder underbuild to several sections of the line along the route. The multiple circuit structures will allow consolidation of existing wind feeder lines that will connect to the substation and accommodate future feeder lines. Since we know that the new Yankee Substation will be designed to accommodate up to twelve feeders and future 115 kV lines, the multiple circuit structures will help to minimize wind feeder and transmission line congestion around the substation. If the MEQB authorizes this flexibility, Xcel Energy would submit the final schematic with MEQB Staff for review prior to construction.

Q. Interstate Telecommunications Cooperative, Inc. has expressed concerns about potential interference of the new 115 kV line and interference from existing collector systems with the telecommunications services it provides in the Lake Benton area. How will Xcel Energy address these concerns?

A. Gary Karn, a Project Manager in the Transmission Asset Management at Xcel Energy, has been assigned to investigate and address telecommunications interference problems experienced by ITC and its customers relating to Xcel Energy's 34.5 kV lines in the area and potential interference from the new 115 kV transmission line. Xcel Energy commits to work with ITC to mitigate any harmful inductive interference with telephone service and to ensure the new 115 kV transmission line's conformance with relevant ANSI/IEEE standards, including IEEE standards 519 and 776. Mr. Karn confirmed Xcel Energy's commitment to ITC in writing on January 25, 2005 and informed ITC of its intention to retain a

consultant to assist with the project. A copy of the letter Mr. Karn set to ITC is attached as Ex. PR-2.

Q. Does this conclude your direct testimony?

A. Yes.

EXHIBIT PR-1 to TESTIMONY OF PAMELA J. RASMUSSEN

Modified Table 1
Route Segment Descriptions
and
Preliminary Locations of Line and Underbuild Considerations

| Route Segment | Route Segment Description | Length (miles) | Transmission Line Structure Type (Underbuild type is preliminary and may change) | Side of Road for Transmission Line | Notes (Corridor width is 300 feet wide, 150 feet each side of road centerline unless otherwise noted) |
|---------------|--|----------------|--|------------------------------------|--|
| A | From Buffalo Ridge Substation along CR 108 to Lincoln CR 9 | 1.0 | Single circuit 115 kV line with single circuit 34.5 kV underbuild | East | Kenetech/LG&E line to be underbuilt on new 115 kV line |
| | CR 9 to point where 34.5 kV line crosses to south side | 1.5 | Single circuit 115 kV line | South | No underbuild |
| | From point where 34.5 kV line crosses to south side to US 75 | 0.5 | Single Circuit 115 kV line with double circuit 34.5 kV underbuild | South | Xcel Energy would prefer wider corridor designation here in case Xcel Energy needs to build south and parallel of existing double circuit wind feeder line. Corridor width 250 feet from centerline of CR 9. |
| B | US 75 | 0.2 | Single Circuit 115 kV line | East | Reroute section of existing 115 kV line |

| Route Segment | Route Segment Description | Length (miles) | Transmission Line Structure Type (Underbuild type is preliminary and may change) | Side of Road for Transmission Line | Notes (Corridor width is 300 feet wide, 150 feet each side of road centerline unless otherwise noted) |
|---------------|--|----------------|--|------------------------------------|--|
| C | From US 75 to Lincoln County 9 | 1.0 | Double Circuit 115 kV line | East | No underbuild |
| | From Lincoln County 9 to where new line would meet the Lake Yankton – Pipestone 115 kV transmission line | 0.7 | Double circuit 115 kv line with single circuit underbuild Xcel Energy requests the flexibility to use H-frame or special structures (wood or steel) here to accommodate the tie with the existing 115 kV transmission line. Xcel Energy may also need the ability to modify up to three structures on the existing 115 kV line to the south. | North (Changed from application) | Double circuit 34.5 kV line is on south side. Distribution line is on north. Xcel Energy designated south side in application. Xcel Energy is proposing to use the north side now, but would prefer flexibility on this section in case in some areas Xcel Energy may need to be located on south side. |
| D | From intersection of new line & Lake Yankton – Pipestone 115 kV transmission line along CR 9 to 160 th Avenue | 1.3 | Single Circuit 115 kV line with single circuit underbuild of distribution line | North | See comment above on Section C |

| Route Segment | Route Segment Description | Length (miles) | Transmission Line Structure Type (Underbuild type is preliminary and may change) | Side of Road for Transmission Line | Notes (Corridor width is 300 feet wide, 150 feet each side of road centerline unless otherwise noted) |
|---------------|---|----------------|--|--|---|
| | From CR 9 & 160 th Avenue, along 160 th Avenue for one mile | 1 | Single Circuit 115 kV line with double circuit underbuild | West (changed from Application) | Xcel would like flexibility along 160 th Avenue to switch from one side of the road to the other if it appears to make sense and would provide that information to EQB prior to construction. |
| E | Along 160 th Avenue up to 140 th Street | 2.0 | Single Circuit 115 kV line with single or double circuit underbuild | West side (changed from application) | Dckt 34.5 kV feeder is on east side. OTP 41.6 kV line is on west side for last mile. The locations of the lines change and it is difficult to determine which side is best without more detailed information. |
| | Along 140 th Street to 130 th Avenue | 3.0 | Single Circuit 115 kV line | North for first 1.5 miles and then south | Underbuild appears to not be required here |
| | Along 130 th Avenue to 160 th Street | 2.0 | Single circuit 115 kV line with single circuit 34.5 kV underbuild | West | Would accommodate feeder lines to/from Yankee |

| Route Segment | Route Segment Description | Length (miles) | Transmission Line Structure Type (Underbuild type is preliminary and may change) | Side of Road for Transmission Line | Notes (Corridor width is 300 feet wide, 150 feet each side of road centerline unless otherwise noted) |
|---------------|---|----------------|--|------------------------------------|---|
| | Along 160 th Street to 120 th Avenue (CSAH1)! | 1.0 | Double Circuit 115 kV line with single circuit 34.5 kV underbuild | South | Would accommodate feeder lines to/from Yankee |
| F | Along 120 th Avenue/CSAH 1 to CSAH 13 | 2.0 | Double Circuit 115 kV line Designed for double circuit 34.5 kV underbuild | West | Would accommodate feeder lines to/from Yankee |
| | Along CSAH 13 to SD/MN Border | 1.4 | Single Circuit 115 kV line Designed for double circuit 34.5 kV underbuild | South | Would accommodate feeder lines to/from Yankee |
| J | Along 120 th Street to CSAH 1 | 4 | Single Circuit 115 kV line | North/South | No underbuild |
| | Along CSAH 1 between 120 th and 160 th Street | 4 | Single Circuit 115 kV line | East/West | |



414 Nicollet Mall
Minneapolis, Minnesota 55401-1993

January 25, 2005

Ren Preheim
Networks Operations Manager
Interstate Telecommunications Cooperative
PO Box 920
312 4th Street West
Clear Lake, South Dakota 57226

Dear Ren,

As we discussed last week, Xcel Energy is committed to finding a solution to the telecommunications interference problem your company and customers have been experiencing in and around the area near Lake Benton, Minnesota. I have been assigned to spearhead the effort for Xcel Energy.

I am working to expedite the process for bringing a consultant on this project. The skills needed are available from consultants we already have working with us. They already have familiarity with the issues, and therefore would be more likely to be in a position to quickly identify the exact sources of the problems as well the best methods to mitigate the effects of those problem sources.

In addition to working on the existing issues near Lake Benton, Xcel's goal is to have the consultant also evaluate any impact the proposed 115kv line to White Substation might have on your facilities. We would be evaluating the impacts of this 115kv line in conjunction with the IEEE Standard 776 as well as IEEE 519.

Our goal is to work with your company to identify and resolve existing issues as well as potential issues involving the proposed 115kv line to White Sub. You can look forward to our continued cooperation in finding the answers needed for both of our facilities to productively co-exist.

I will keep you informed to our progress in dispatching consultants to this project.

Sincerely,

A handwritten signature in black ink that reads 'Gary Karn'. The signature is fluid and cursive, with the first name 'Gary' and last name 'Karn' clearly distinguishable.

Gary Karn

Project Manager -Transmission Asset Management
Xcel Energy - 414 Nicollet Mall - 6th Floor
612-330-6377

EXHIBIT PR - 2